ARIZONA POPULATION STATISTICS POLICIES

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A. PURPOSE

To provide documentation which describes the method used in development of the Composite Estimates Methodology

B. AUTHORITY

A.R.S § 41-1954 A14, A15

C. OVERVIEW

The Composite Method estimates the household population by age group and each age group is estimated using an indicator selected to correspond to that age group. The estimated age groups and the corresponding indicator variables are listed below:

Age Group	Indicator Variable	Indicator Variable Name
Age 0-4	Vital Statistics Cohort (Births less deaths for the previous 5 years)	VS Cohort
Age 5-17	K-12 School enrollment	Enrollment
Age 18-64	Driver licenses	Licenses
Age 65+	Medicare enrollment	Medicare

Each household population age group in the Census year is divided by an estimate of the indicator variable at time of the Census and then each age group is assumed to change according to the indicator variables. Thus, estimates of population, by age group, in 2006 are calculated as follows:

Age0-4(2006) = Age0-4(2000)/VS Cohort(2000) * VS Cohort(2006)
Age5-17(2006) = Age5-17(2000)/Enrollment(2000) * Enrollment(2006)
Age18-64(2006) = Age18-64(2000)/Licenses(2000) * Licenses(2006)
Age65+(2006) = Age65+(2000)/Medicare(2000) * Medicare(2006)

Then the estimates, by age group are summed to arrive at total household population. These calculations are made at the county level and are summed to get state totals. This is only a conceptual description of the Composite Model; actual calculations are more complicated and are discussed in detail below.

D. MODEL

As the name implies, the general form of the composite method is based on a combination of methods for estimating different age groups and the total household population is arrived at by summing the different age groups. Censal-ratio methods are used separately to estimate the following populations: under 5 years; 5 to 17 years; 18 to 64 years; and 65 years and older. Different data series are used with each age group: vital statistics for persons under 5 years; school enrollments for the 5 to 17 age group; drivers' licenses for persons aged 18 to 64; and Medicare enrollments for persons 65 years and older.

1. Under 5 years of age.

Data on births and deaths reported for a calendar year are used to estimate the population under 5 years of age. The vital statistics cohort aged 0 to 4 is derived from birth and death data and estimated for January 1 of each year. The vital statistics cohort is estimated as the sum of births over the prior five years minus the sum of deaths to persons born over that interval. Annual estimates of the vital statistics cohort aged 0 to 4 are derived in the following manner, illustrated for January 1, 2000.

Vital Statistics Cohort Aged 0 to 4 on January 1, 2000
= Sum of Births – Sum of Deaths

Sum of Births =
All Births 1995 through 1999

Sum of Deaths =
All Deaths to infants 1995 through 1999 +
All Deaths to persons aged 1 in 1996 through 1999 +
All Deaths to persons aged 2 in 1997 through 1999 +
All Deaths to persons aged 3 in 1998 through 1999 +
All Deaths to persons aged 4 in 1999

These calculations yield an estimate, based on Vital Statistics, of the cohort of persons aged 0-4 that have survived from birth. The calculations described by the formulas above are graphically presented in Figure 1.

Figure 1. Calculation of Vital Statistics Cohort Aged 0 to 4 on January 1, 2000.

In order to derive the Censal Ratio, the vital statistics cohort is estimated for April 1, 2000, and compared with the Census 2000 count of the population aged 0 to 4.

Censal Ratio = Census count of population aged 0 to 4 /
Vital Statistics cohort aged 0 to 4, estimated for April 1, 2000.

In order to estimate the population aged 0 to 4 at a subsequent date, for example July 1, 2006, the following calculation is performed.

Estimate of Population Aged 0 to 4 on July 1, 2006 = Censal Ratio X
Vital Statistics cohort aged 0 to 4, estimated for July 1, 2006

The vital statistics data for a calendar year are used to calculate the vital statistics cohort aged 0 to 4 as of January 1 of each year. In order to estimate the population for July 1, the vital statistics cohort is estimated for July 1, either by interpolation of the annual estimates for the prior and subsequent Januaries, or by a time series extrapolation from the series.

If the censal ratio is greater than 1, and assuming coverage is the same in the census and vital statistics systems, then the net migration rate of young children born elsewhere has been positive over the five year period. If the ratio is less than 1, then the net rate of young children has been negative. Using the Censal Ratio in years subsequent to the census assumes that the net migration rate remains the same.

2. <u>5 to 17 years of age</u>.

Data on school enrollment for grades K-12 reported for a point in time, October 1, are used to estimate persons aged 5 to 17 years. In order to derive the Census Ratio, school enrollment for April 1, 2000 is estimated and compared with the Census 2000 count of the household population aged 5 to 17.

Censal Ratio = Census 2000 count of household population aged 5 to 17 / School Enrollment estimated for April 1, 2000.

In order to estimate the household population of persons aged 5 to 17 at a subsequent date, for example July 1, 2006, the following calculation is performed.

Estimate of Household Population Aged 5 to 17 on July 1, 2006 = Censal Ratio X School Enrollment, estimated for July 1, 2006.

The estimates of school enrollment for April 1 and July 1 are based on the October 1 enrollment counts and are estimates of partial change between the October 1 counts rather than actual point-in-time estimates for those dates.

3. <u>18 to 64 years of age</u>.

Data on driver licenses reported for a point in time, July 1, are used to estimate persons in the household population aged 18 to 64 years. In order to establish the ratio of driver licenses to the Census count of persons in the household population aged 18 to 64 years, the number of driver licenses for April 1, 2000 is estimated. The estimates of driver licenses for April 1 are based on the July 1 point-in-time counts and are estimates of partial change between the July 1 counts rather than actual point-in-time estimates for April 1.

Censal Ratio = Census 2000 count of household population aged 18 to 64 / Licensed Drivers estimated for April 1, 2000.

In order to estimate the household population of persons aged 18 to 64 at a subsequent date, for example July 1, 2006, the following calculation is performed.

Estimate of Household Population Aged 18 to 64 on July 1, 2006 = Censal Ratio X Licensed Drivers on July 1, 2006.

4. <u>65 years and older</u>.

Data on Medicare enrollments for the Aged category reported for a point in time, July 1, are used to estimate persons in the household population aged 65 years and older. In order to establish the ratio of Medicare enrollees to the Census 2000 count of persons in the household population aged 65 years and older the number of enrollees for April 1, 2000 is estimated. The estimates of Medicare enrollees for April 1 are based on the July 1 point-in-time counts and are estimates of partial change between the July 1 counts rather than actual point-in-time estimates for April 1.

Censal Ratio = Census 2000 count of household population aged 65+ / Medicare Enrollees on April 1, 2000.

In order to estimate the household population of persons aged 65 years and older at a subsequent date, for example July 1, 2006, the following calculation is performed.

Censal Ratio Estimate of Household Population Aged 65+ on July 1, 2005 = Medicare Enrollees on July 1, 2003 X Censal Ratio.

E. INPUT DATA

The input data used in the Composite Method for population estimates include population counts from the US Census Bureau; vital statistics from the Arizona Department of Health Services; school enrollments from the Arizona Department of Education; driver license counts from the Arizona Motor Vehicles Department; and Medicare enrollments from the US Department of Health and Human Services.

Our need is to produce annual estimates of population that are for July 1. The estimates are for updates of the population as measured in the US Census Bureau's 2000 Census of Population and Housing. The 2000 Census counted persons in their usual place of residence. People were asked to report where they lived for most of the year. College students were to report where they lived while attending college rather than their parent's home or their legal address (*de jure*) if they did not live there most of the year. Seasonal residents were asked not to report where they were actually located on April 1 (*de facto*) unless that was where they lived most of the year. The reference date for the 2000 Census was April 1, 2000. The July 1 estimates are not for an actual point-in-time, but rather are mid-year estimates for the years between censuses.

Some of the indicator data are for a specific point-in-time while others record events over an interval. The reference dates for the indicator data vary as well, with some on July 1, some on October 1, and some as of January 1. In order to establish the censal ratios and to prepare the estimates the differences in the reference dates need to reconciled. In order to establish the censal ratios, all indicator data are estimated for April 1, 2000. For the population estimates all indicator data are estimated for July 1 of the estimate year.

Another issue is the timeliness of the indicator data. Some of the data series are current while others lag by several months or a couple years. There are three alternatives to deal with these lags. The first is to wait until all data have been reported before preparing estimates. This is not acceptable because it would mean producing population estimates more than two years after their reference date. The second is to build the lag into the censal ratio. If data are available 18 months after their reference date, then the censal ratio is calculated with this lag built in. That is, the censal ratio is calculated using the indicator data with a reference date of October 1, 1998 with the census count which is for April 1, 2000. There are two problems with this approach. If the interval between availability of the data and production of the estimates is different—either longer or shorter—then it requires recalculation of the censal ratio to adjust to a different lag period. The other problem is that it does not allow for an evaluation of the accuracy of assuming that data with an 18 month lag are good predictors of their value 18 months later. The third approach is to use time series analysis to estimate the value of the indicator data for July 1 of the estimate year. This means preparing short term projections from the indicator data's historical series. An advantage of this approach is that when more current data are available they can be used to update the time series without making it necessary to recalculate the census ratio. It will also provide an annual opportunity to evaluate how accurately the data series were predicted. If the errors of predictions become too great, it signals the need to re-evaluate use of the data series.

Population Counts from the US Census Bureau

The US Census Bureau's Census 2000, Summary File 1, Table PCT013 is the source for counts of persons by age group living in households. These data are accepted as is and not adjusted for any under or over count. They are the official population counts and serve as the base for estimates of household population for subsequent years.

Vital Statistics from the AZ Department of Health Services

The data on births and deaths by single year of age are produced by the Arizona Department of Health Services. The Department of Health Services maintains a web site with vital statistics information at http://www.azdhs.gov/plan/. Data on live births by mother's county of residence are provided in Table 5B-3, and for deaths by resident county and age are provided in Tables 5E-15 and 5E-16. The data needed for calculating the vital statistics cohort aged 0-4 years require deaths by single year of age. The

Department of Health Services provides these data to AZDES by a special tabulation.

The data are produced by calendar year and there is a lag between the end of the calendar year and the availability of these data in final form. Provisional data are available with only a 1-2 month lag, but the data are subject to revision before they become final and official.

School Enrollments from the AZ Department of Education.

The data on school enrollments are produced by the Arizona Department of Education. The Department of Education maintains a public access web site, with the October 1st enrollment figures for current and prior years at, http://www.ade.az.gov/researchpolicy/AZEnroll/. The Research & Evaluation Section of the Department of Education collects and prepares these data. School districts report their head count of all active enrollments on October 1st of each school year.

Charter Schools. The potential problem is with coverage and whether students attending charter schools are included in the enrollment data. Charter schools, permitted by the Arizona School Improvement Act of 1994, serve as alternatives to traditional public schools. The data on enrollment include students enrolled in both traditional district and charter schools.

Open Enrollment. The potential problem is that students may be enrolling in schools not in their county of residence, and that there may have been substantial change in cross county enrollment since the Census 2000. Such a change could affect data quality with respect to coverage and consistency. "The Arizona School Improvement Act of 1994 (amended in 1995) mandates that public schools provide open enrollment opportunities throughout Arizona. The law was passed to allow parents/guardians to register their children in neighboring schools and school districts in an effort to give them a choice in school selection." (Source: http://www.prescott.k12.az.us/school_choice.htm)

In the Superintendent's Annual Report and the annual School Finance Reports prepared by the Arizona Department of Education there are breakdowns of students by resident and non-resident enrollment. These data are for average daily attendances which are not the same as the October 1 enrollment data. Rather it is the average daily membership for the first 100 days in session for students that attend school in the district. The data are broken down by students residing in the school district and those not residing in the school district. The classification of students as non-resident includes those residing in another school district in the same county as well as those residing in a school district outside the county. The report does not distinguish between these. The number reported for Attending Average Daily Membership is smaller than for October 1 Enrollment Counts because it is based on the average of actual daily attendance, not the total number of students enrolled in the schools.

Assessing Impact of Open Enrollment

	Maricopa County			Pinal County		
Fiscal Year	October Enrollment	Resident ADA	Non-Resident ADA	October Enrollment	Resident ADA	Non-Resident ADA
1999-2000	519,222	470,781	1,840	27,377	25,176	182
2000-2001	544,617	481,013	2,025	25,889	25,436	159
2001-2002	565,517	497,091	2,092	28,564	26,568	215
2002-2003	600,577	514,044	2,232	33,006	27,458	253
2003-2004	626,461	528,062	2,445	33,250	28,357	182
2004-2005	657,958	574,545	3,239	35,408	30,182	175

Source: Arizona Department of Education, Superintendent's Annual Report for 1999-2000 through 2003-2004; Financial Report for 2004-2005

In order to explore the potential impact of open enrollment we have created the table above. Jack Tomasik of the Central Arizona Association of Governments suspected that

increasing numbers of students residing in Pinal County were open enrolling in schools located in Maricopa County, and so we have chosen to compare data for these two counties.

The columns we focus on are Non-Resident ADA for Maricopa County and October Enrollment for Pinal County. For Maricopa County, the level of average data attendance (ADA) among students living outside the school district in which they are enrolled increased from 1,840 in the 1999-2000 Fiscal Year to 3,239 in the 2004-2005 Fiscal Year. We used the October 1 enrollment for FY1999-2000 and FY 2000-2001 in combination with the Census 2000 to establish the censal ratio and the October 1 enrollment for FY2004-2005 and FY 2005-2006 to estimate the youth population for 2005. If the proportion of students open enrolling outside their county of residence (Pinal County) increased between 2000 and 2005 then the Censal Ratio would underestimate the youth population by a similar proportional difference.

The Non-Resident ADA includes students living in the county but in another school district as well as students living in other counties. If however the entire Non-Resident ADA in Maricopa County were accounted for by students residing in Pinal County then they would have represented 6.7 percent of Pinal County's October Enrollment in FY1999-2000 and increased to 9.1 percent of Pinal County's October Enrollment in FY2004-2005, then the enrollment figures would be 2.4 percent too low. That appears to be the most extreme case.

For Pinal County the Censal Ratio of Census count of household population aged 5 to 17 years to October Enrollment is the third highest in the state, behind Apache and Coconino Counties. The high ratio is consistent with a high proportion of students open enrolling outside the county, but if that is the case it appears that the Census Ratio is already taking account of much of that. The impact of Open Enrollment across county boundaries does have potential for affecting the estimates of youth population and should be examined in greater detail and monitored over time.

Duplicate Counts. The Department of Education states,

"Please note these counts are not unduplicated counts; concurrently enrolled students are counted as having an active membership in each school. Also, be aware there was a change in data collection in 2003. From 2003 forward, concurrent enrollments in technology schools are included, which may additionally overstate aggregated enrollment figures." (Source: http://www.ade.az.gov/researchpolicy/AZEnroll/)

To the extent that there are substantial differences between counties in the duplicate counting of students and that these differences have changed since the Census 2000 they could be a source of error in the estimates process. With the available data there is no way to evaluate this potential source of error.

Revised Enrollments for October 1, 2004. The enrollment figures for October 1, 2004 were revised and published June 2006. These are not the enrollment data that were used to estimate the July 1, 2005 county populations; however they have been used in order to establish the historical series for enrollment and to project enrollment for the July 1, 2006 population estimates.

Driver Licenses from the Arizona Motor Vehicles Division

The data on driver licenses are produced by the Motor Vehicle Division of the Arizona Department of Transportation (AZ MVD). The Motor Vehicle Division maintains a web site with driver license statistics at http://www.azdot.gov/mvd/statistics/driverLicense.asp and the report series used is MV-708. The count of driver licenses used for these estimates is for a point-in-time, July 1, and is for all licenses (commercial and non-commercial) on file as of that date. There is a lag of 1 week between the reference and publication dates.

Change in Programming Logic – February 2004. Between 2003 and 2004 there was a

change in the programming logic used by AZ MVD resulting in a substantial difference between the prior and succeeding years. In the terminology of time series data analysis this was an abrupt and permanent difference and requires that an adjustment be made to the time series in order that the data are comparable for purposes of establishing census ratios and estimating population in subsequent years.

The Strategic Planning and Statistical Research Unit of the AZ MVD have stated the following:
Please be advised that this report (MV708) was reformatted In February 2004 to include a breakout of commercial vs. non-commercial licenses by county, among other changes. In addition, all counts were validated via programming checks and balances. In the process of this validation effort, it was discovered that previous years' reports contained counts that were questionable, due to differences in programming logic. For example, in January 2004, when the older report structure was still in place, some counts of identification cards and driver license categories were moderately to significantly higher than were presented in the reformatted and validated February 2004 report.
As a result of our findings at the time, we determined that it would be best to not publish the older reports since they could not be reliably compared with the newer reports. The FY 1999-2003 reports are certainly comparable, since they all utilize the same programming; likewise, the FY 2004 report is comparable with 2005. However, when looking at a breakout by counties, reports from earlier years do not distinguish between commercial and non-commercial licenses. Furthermore, it is not possible to recreate data for earlier years using the newer report format. This is because the data is strictly "point-in-time." License status codes applied to today's records cannot be reconstructed to reflect what was true of yesterday's records. Additionally, records purged today cannot be recreated to reflect yesterday's records, either. Such is an unfortunate limitation of our current mainframe system.

In order to adjust the data series to overcome the break in the series between July 1, 2003 and July 1, 2004 we needed to re-express the counts for 1999 through 2003 to be consistent with the counts for 2004 and 2005. We maintained each county's share of the state total from 1999 through 2003 and adjusted the state total to be consistent over time. We used the average of the annual rates of change in state driver licenses for the years 1999 through 2003, and 2004 to 2005 as the rate of change for the state between 2003 and 2004. The annual rate of change for comparable years varied from a high of 4.1 percent for the period 1999-2000 to a low of 3.1 percent for the period 2004-2005. The average rate of change for the comparable years, 1999-2000, 2000-2001, 2001-2002, 2002-2003, and 2004-2005 was 3.5 percent and this value was used as an estimate of the rate of change for the period 2003-2004. The data were made comparable to 2004 and 2005 by using the rates of change (estimated for 2003-2004 and reported for earlier periods) to back down to 1999. Then the county values for 1999 through 2003 were derived by applying their shares of the original state total to new adjusted state totals for these years.

Error in Programming Logic – July 2005. The data for July 1, 2005 have an error in programming logic that resulted in an overstatement of the number of driver licenses. In a message to AZDES on December 1, 2005 the Statistical Research Unit of the AZ MVD stated the following:

In February 2005, a programming change was made to the MVD database to identify counts of Active Military driver licenses, which impacted the MV708 report. This report provides point-in-time counts of driver credentials that are both current and valid. Inadvertently, programming was set to include, rather than exclude, expired Active Military driver credentials. Subsequently, overcounts occurred in most classes of driver credentials, but most especially in Class M: Motorcycle.

The error was not discovered until late October 2005, but reports issued in April, June, and October 2005 are all affected. This error has since been corrected. It is recommended that the MV708 report, dated 11/04/2005, be used to replace all April, June, and October 2005 reports.

In order to adjust the data series to compensate for this error, we estimate the corrected value for July 1, 2005 by linear interpolation between July 1, 2004 and November 4, 2005. The MVD error in programming logic led to an "overcount" in driver licenses and therefore we did not allow our process to produce higher estimates than were originally reported for a county. The major changes were a reduction in driver licenses for Cochise, Maricopa, Pima and Yuma Counties.

Annual Series for Counties Unstable. The annual series for counties, especially smaller counties showed considerable variability from year to year. We posed this question to staff in the MVD Statistical Research Unit and were told that counties do not follow a consistent schedule for updating their files and that can lead to a saw-tooth pattern in the data series. In order to smooth the pattern we used three-year moving averages which we believe more accurately reflect the underlying trend in the data series..

Medicare Enrollments from the US Department of Health and Human Services.

Data on Medicare Enrollments are produced by the Centers for Medicare & Medicaid Services (CMS) in the US Department of Health and Human Services. The CMS maintains a web site with enrollment statistics at http://www.cms.hhs.gov/statistics/enrollment/. The relevant data series is for Aged persons (65+ years of age), the unduplicated count of persons enrolled in Part A - Hospital Insurance (HI) and/or Part B - Supplemental Medical Insurance (SMI) programs. The unduplicated count is equal to the sum of persons aged 65 years and older enrolled in Part A Only; Part A & Part B; and Part B Only.

The data are a point-in-time count as of July 1 of the reference year, and there is a substantial lag between the reference date and the availability of these data.

F. ESTIMATED EQUATIONS.

The Censal Ratios for each age group are calculated in the manner described above in Section 1 on the model. The following table presents a summary of the calculations for Apache County.

Censal Ratio Estimates of Population Size

	Apache
Ages 0-4	
Censal Ratio =	1.003675
Census count of household population aged 0 to 4	6,281
Vital Statistics Cohort on 4/1/2000	6,258
Ages 5-17	
Censal Ratio =	1.332984
Census count of household population aged 5 to 17	20,340
/ School Enrollment 4/1/2000.	15,259
Ages 18-64	
Censal Ratio =	1.148089
Census count of household population aged 18 to 64	35,988
/ Driver Licenses 4/1/2000	31,346
Ages 65 and Older	
Censal Ratio =	1.035895
Census count of household population aged 65+	5,541
/ Medicare Enrollees on April 1, 2000	5,349

The Censal Ratios vary by county. The following table presents the censal ratios for each age group for all counties.

Censal Ratios For Calculating Estimates of Household Population

	Age Group			
State/County	0-4	5-17	18-64	65+
Apache	1.003675	1.332984	1.148089	1.035895
Cochise	0.951999	1.094802	0.742764	1.078961
Coconino	0.943897	1.201960	0.784802	0.735079
Gila	0.922301	1.014139	0.719779	1.017723
Graham	1.123867	1.189452	0.902118	1.065980
Greenlee	0.942743	1.027764	0.799646	0.910849
La Paz	1.154862	1.083362	0.769823	1.636129
Maricopa	1.010626	1.095913	0.977678	1.087288
Mohave	1.071772	1.114342	0.699282	1.089571
Navajo	0.987441	1.116331	0.949197	1.047833
Pima	0.975880	1.142924	0.911424	1.054814
Pinal	1.096927	1.228363	0.939526	1.349491
Santa Cruz	0.859762	0.984867	0.805405	0.957482
Yavapai	1.084118	1.084146	0.750642	1.134403
Yuma	0.881365	1.098992	0.965069	1.579586

The ideal ratio between a census count and a symptomatic indicator based on administrative records is 1, and should remain as such over time. If the ratio is greater than one it means that the population measured by the indicator is smaller than the census count and a ratio less than one means that the population measured by the indicator is larger than the census count. Small differences are not a problem as long as the relationship between the population counted in a census and the population measured by the symptomatic indicator remains stable. It is also desirable that the ratio for the counties be similar to the state and each other. Where the value of the ratio for a county departs from the state and it has a logical explanation that can reduce concern about use of the census ratio.

Based on these criteria, the vital statistics series used to estimate the population aged 0 to 4 years performs the best. The ratio is close to 1 for the state and many of the counties. La Paz and Yuma Counties are two counties with large departures from a ratio of 1—with La Paz high and Yuma low. In 1983 La Paz County was created from the northern part of Yuma County and it may be that births to residents of La Paz County are incorrectly attributed to Yuma County.
School enrollments are consistently lower for counties than the census count of persons ages 5 to 17 years. The Education Department's enrollment numbers do not cover all school age youth and so this under-reporting makes sense. The ratio does not vary much by county and the consistency is very similar to the vital statistics series.

The driver license series is generally higher than the census count of persons aged 18 to 64, which is consistent with persons holding more than one license and older persons aged 65 and over also holding driver licenses. The ratio varies by county considerably more than either the vital statistics or school enrollment series.

The Medicare enrollment series is surprisingly the symptomatic indicator with the worst characteristics. The variability of the censal ratio for Medicare enrollment with the census count of persons aged 65 and over is double that of driver licenses and almost three times the variability of vital statistics and school enrollment.

G. ALTERNATIVE APPROACH FOR MARICOPA AND PINAL COUNTIES

Of all the counties in Arizona, Pinal County is the most dependent upon outside employment for its residents. Forty percent of the county residents in the workforce work outside Pinal County, according to the Census 2000 data on journey-to-work. Thirty-three percent commute to work in Maricopa County. The social and economic integration of these counties is great and therefore it is reasonable to consider treating the metropolitan area (Maricopa and Pinal Counties) as one for exploring alternative approaches to estimating population.

The Composite Method estimate of household population for the two counties of the metropolitan area for July 1, 2005 is 3,894,776. The 2005 Special Census Survey for Maricopa County estimated the population of Maricopa County at 3,616,691. The difference between the estimates for the metropolitan area and Maricopa County is 278,085. This represents an estimate of Pinal County's population (and possible error in the two estimates). The Composite Method estimate based on Census 2000 of household population for Pinal County for July 1, 2005 is 222,400.

The procedure to be followed is to prepare estimates for the Phoenix-Mesa-Scottsdale, AZ Metropolitan Statistical Area (Maricopa and Pinal Counties) using the Composite and Housing Unit Methods. Allocate the metro area household population to the jurisdictions using the Housing Unit Method. The county estimates will then be the sum of their jurisdictions.